

(FILE 'HOME' ENTERED AT 10:27:36 ON 07 DEC 2002)

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE' ENTERED AT 10:27:48 ON 07 DEC 2002

L1 4663 S PIEZO
L2 204935 S TRANSGENIC OR KNOCKOUT
L3 24 S L1 AND L2
L4 14 DUP REM L3 (10 DUPLICATES REMOVED)

L4 ANSWER 10 OF 14 MEDLINE
 ACCESSION NUMBER: 2001307197 MEDLINE
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 TITLE: Application of the **piezo**-micromanipulator for
 injection of embryonic stem cells into mouse blastocysts.
 AUTHOR: Kawase Y; Iwata T; Watanabe M; Kamada N; Ueda O; Suzuki H
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 AB Microinjection of embryonic stem (ES) cells into mouse blastocysts is one
 of the most important techniques for production of **knockout** or
transgenic mice. However, skillful manipulation techniques and
 tremendous effort are required for this method. To overcome this
 difficulty, we applied a **piezo**-micromanipulator (PMM), which has
 been used for intracytoplasmic sperm injection in mice and production of
 cloned mice, for the injection of ES cells into blastocysts. When ES cells
 were injected by using a conventional method, 91% of the blastocysts were
 manipulated successfully. Using the PMM significantly ($P < 0.01$) increased
 the success rate of ES injection to 97%. The number of embryos manipulated
 in an hour increased from 9.7 embryos with the conventional method to 27.0
 embryos with the PMM method. The injected ES cells did not show any
 detrimental effects due to a pulse from the PMM. After embryo transfer of
 the manipulated blastocysts, 39% of the newborns were chimeric mice with
 the conventional method, whereas 42% of the neonates were chimeric after
 the PMM method. These results indicate that microinjection of the ES cells
 into blastocysts is more efficient by the PMM method than the conventional
 method.

Indicates Piezo technique developed after filing date

(FILE 'HOME' ENTERED AT 08:45:44 ON 07 DEC 2002)

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, CANCERLIT' ENTERED AT 08:45:58 ON
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L1	8241 S XO
L2	19120 S TETRAPLOID
L3	28 S L1 AND L2
L4	13 DUP REM L3 (15 DUPLICATES REMOVED)

L Number	Hits	Search Text	DB	Time stamp
1	531	tetraploid	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:15
2	24101	transgenic	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:15
3	123	tetraploid and transgenic	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:15
4	169558	mouse	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:16
5	70	((tetraploid and transgenic) and mouse	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:16
6	20240	embryo	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:16
7	52	((tetraploid and transgenic) and mouse) and embryo	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:17
8	38	tetraploid with embryo	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:18
9	22	mouse and (tetraploid with embryo)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:25
10	5715	xo	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:25
11	7	tetraploid and xo	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/07 08:25